



COPY OF PAPERS
ORIGINALLY FILED

#4A Amdt.
M. Braunson
PATENT APPLICATION
Do. No. 9898-217 9/5/02

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re application of: Jae-Hyun JOO and Wan-Don KIM

Serial No. 10/055,270

Examiner: Mai, Anh D

Filed: January 22, 2002

Group Art Unit: 2814

For: METHOD FOR MANUFACTURING A SEMICONDUCTOR DEVICE
HAVING A METAL-INSULATOR CAPACITOR

BOX NON FEE AMENDMENT
Assistant Commissioner for Patents
Washington, D.C. 20231

RESPONSE TO OFFICE ACTION

Responsive to the Office Action, dated May 17 2002, please amend the application as follows.

RECEIVED
SEP - 3 2002
TECHNOLOGY CENTER 1800

IN THE CLAIMS

1. (Once amended) A method of fabricating a semiconductor device, comprising the steps of:

forming a lower electrode on a substrate;
subjecting the lower electrode to a pre-annealing, wherein the pre-annealing is a thermal annealing under a selected atmosphere;
forming a capacitor dielectric layer on the pre-annealed lower electrode, wherein the capacitor dielectric layer is formed of a crystalline material; and
forming an upper electrode on the capacitor dielectric layer.

2. (Once amended) The method of claim 1, wherein the lower electrode is formed of a material selected from the group consisting of a metal and a metal oxide.

3. (Once amended) The method of claim 2, wherein the lower electrode is formed by a CVD method.



COPY OF PAPER
ORIGINALLY FILED

2814
PATENT APPLICATION
Do. No. 9898-217

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re application of: Jae-Hyun JOO and Wan-Don KIM

Serial No. 10/055,270

Examiner: Mai, Anh D

Filed: January 22, 2002

Group Art Unit: 2814

For: METHOD FOR MANUFACTURING A SEMICONDUCTOR DEVICE
HAVING A METAL-INSULATOR CAPACITOR

BOX NON FEE AMENDMENT

Assistant Commissioner for Patents,
Washington, D.C. 20231

Responsive to the Office Action dated May 17, 2002, enclosed is an amendment in the above-identified application.

The fee has been calculated as shown below.

CLAIMS AS AMENDED					
For:	Number After Amendment	Previous Number	Extra	Rate	Additional Fee
Total Claims	29	29	0	x \$18 =	\$0
Independent Claims	3	3	0	x \$84 =	\$0
TOTAL ADDITIONAL FEE FOR THIS AMENDMENT					\$0

*greater of twenty (20) or number for which fee has been paid

**greater of three (3) or number for which fee has been paid

Respectfully submitted,

MARGER JOHNSON & McCOLLOM, P.C.



20575

PATENT TRADEMARK OFFICE

Alan T. McCollom
Reg. No. 28,881

MARGER JOHNSON & McCOLLOM, P.C.
1030 SW Morrison Street
Portland, OR 97205
(503) 222-3613

TECHNOLOGY CENTER 2800

SEP - 3 2002

RECEIVED

I HEREBY CERTIFY THAT THIS CORRESPONDENCE IS BEING DEPOSITED WITH THE UNITED STATES POSTAL SERVICE AS FIRST CLASS MAIL IN AN ENVELOPE ADDRESSED TO:

☐ COMMISSIONER OF PATENTS AND TRADEMARKS, WASHINGTON D.C. 20231

☒ ASSISTANT COMMISSIONER FOR PATENTS, WASHINGTON D.C. 20231

☐ ASSISTANT COMMISSIONER FOR TRADEMARKS, 2900 CRYSTAL DRIVE, ARLINGTON VA 22202-3513

ON 8-16-02